

# Comparisons of Job Characteristics

**Focus Occupation:** [Chemical Technicians \(19-4031\)](#)

**Associated Occupation:** [Food Scientists and Technologists \(19-1012\)](#)

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

[Compare Tools and Technologies](#)

|    |                                                    |
|----|----------------------------------------------------|
| << | Focus occupation element is much lower             |
| <  | Focus occupation element is lower                  |
| 0  | Focus occupation element is at a similar level     |
| >  | Focus occupation element is at a higher level      |
| >> | Focus occupation element is at a much higher level |

## Knowledge

Similarity of Focus Occupation to Associated Occupation: 67

**Focus Occupation:** Chemical Technicians (19-4031)

**Associated Occupation:** Food Scientists and Technologists (19-1012)

| Associated Occupation's Key Knowledge Elements | Average Rating, All Occupations | Associated Occupation's Rating | Focus Occupation's Rating |    | Evaluation of Focus Occupation                      |
|------------------------------------------------|---------------------------------|--------------------------------|---------------------------|----|-----------------------------------------------------|
| Chemistry                                      | 4.8                             | 19.8                           | 18.6                      | 0  | Current knowledge level may be sufficient           |
| Production and Processing                      | 6.0                             | 18.6                           | 8.5                       | << | Extensive education and/or training may be required |
| Biology                                        | 3.7                             | 16.8                           | 6.8                       | << | Extensive education and/or training may be required |
| Food Production                                | 2.1                             | 15.9                           | 1.0                       | << | Extensive education and/or training may be required |
| Mathematics                                    | 9.2                             | 14.5                           | 14.6                      | 0  | Current knowledge level may be sufficient           |
| Engineering and Technology                     | 5.7                             | 13.9                           | 10.2                      | << | Extensive education and/or training may be required |
| Physics                                        | 4.3                             | 13.1                           | 9.6                       | << | Extensive education and/or training may be required |

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

## Skills

Similarity of Focus Occupation to Associated Occupation: 70

**Focus Occupation:** Chemical Technicians (19-4031)

**Associated Occupation:** Food Scientists and Technologists (19-1012)

| Associated Occupation's Key Skills Elements | Average Rating, All Occupations | Associated Occupation's Rating | Focus Occupation's Rating |    | Evaluation of Focus Occupation                               |
|---------------------------------------------|---------------------------------|--------------------------------|---------------------------|----|--------------------------------------------------------------|
| Writing                                     | 9.2                             | 13.2                           | 11.5                      | <  | A higher skill level may be required                         |
| Active Learning                             | 8.7                             | 12.5                           | 9.0                       | << | Extensive development of skills in this area may be required |
| Complex Problem Solving                     | 9.1                             | 12.3                           | 9.3                       | << | Extensive development of skills in this area may be required |
| Monitoring                                  | 9.9                             | 12.3                           | 11.5                      | 0  | Current skill level may be sufficient                        |

|                          |     |      |      |    |                                                              |
|--------------------------|-----|------|------|----|--------------------------------------------------------------|
| Quality Control Analysis | 5.9 | 10.5 | 10.0 | 0  | Current skill level may be sufficient                        |
| Systems Analysis         | 6.5 | 10.5 | 6.9  | << | Extensive development of skills in this area may be required |
| Negotiation              | 6.8 | 9.7  | 6.6  | << | Extensive development of skills in this area may be required |
| Systems Evaluation       | 6.4 | 9.7  | 6.4  | << | Extensive development of skills in this area may be required |

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

| Abilities                                                                                                              |                                 | Similarity of Focus Occupation to Associated Occupation: 91 |                           |                                |                                                    |
|------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------|---------------------------|--------------------------------|----------------------------------------------------|
| Focus Occupation: Chemical Technicians (19-4031)<br>Associated Occupation: Food Scientists and Technologists (19-1012) |                                 |                                                             |                           |                                |                                                    |
| Associated Occupation's Key Abilities Elements                                                                         | Average Rating, All Occupations | Associated Occupation's Rating                              | Focus Occupation's Rating | Evaluation of Focus Occupation |                                                    |
| Inductive Reasoning                                                                                                    | 10.2                            | 14.5                                                        | 12.8                      | <                              | Some improvement in abilities may be required      |
| Written Comprehension                                                                                                  | 11.0                            | 14.5                                                        | 13.5                      | 0                              | Current ability level may be sufficient            |
| Problem Sensitivity                                                                                                    | 11.1                            | 13.9                                                        | 11.4                      | <                              | Some improvement in abilities may be required      |
| Category Flexibility                                                                                                   | 9.0                             | 13.5                                                        | 11.6                      | <                              | Some improvement in abilities may be required      |
| Deductive Reasoning                                                                                                    | 10.6                            | 13.5                                                        | 12.8                      | 0                              | Current ability level may be sufficient            |
| Written Expression                                                                                                     | 9.8                             | 13.3                                                        | 12.0                      | <                              | Some improvement in abilities may be required      |
| Originality                                                                                                            | 7.6                             | 11.1                                                        | 7.7                       | <<                             | Extensive improvement in abilities may be required |
| Fluency of Ideas                                                                                                       | 7.6                             | 11.0                                                        | 7.3                       | <<                             | Extensive improvement in abilities may be required |
| Number Facility                                                                                                        | 6.3                             | 11.0                                                        | 8.6                       | <                              | Some improvement in abilities may be required      |
| Mathematical Reasoning                                                                                                 | 6.3                             | 10.8                                                        | 8.8                       | <                              | Some improvement in abilities may be required      |
| Time Sharing                                                                                                           | 6.6                             | 8.5                                                         | 6.0                       | <<                             | Extensive improvement in abilities may be required |

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

| Activities that Both Occupations Have in Common                                                                                      |                         | Similarity of Focus Occupation to Associated Occupation: 89 |
|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------|
| <b>Focus Occupation: Chemical Technicians (19-4031)</b><br><b>Associated Occupation: Food Scientists and Technologists (19-1012)</b> |                         |                                                             |
| Work Activities                                                                                                                      | Exclusivity of Activity |                                                             |
| Adhere to safety procedures                                                                                                          | 12                      |                                                             |
| Analyze chemical experimental, test, or analysis data or findings                                                                    | 69                      |                                                             |

|                                                                         |    |
|-------------------------------------------------------------------------|----|
| Analyze scientific research data or investigative findings              | 27 |
| Collect scientific or technical data                                    | 30 |
| Communicate technical information                                       | 4  |
| Compile numerical or statistical data                                   | 38 |
| Conduct analyses or tests of organic compounds                          | 71 |
| Conduct analyses to determine physical properties of materials          | 80 |
| Conduct laboratory research or experiments                              | 57 |
| Conduct standardized qualitative laboratory analyses                    | 62 |
| Conduct standardized quantitative laboratory analyses                   | 62 |
| Develop or maintain databases                                           | 30 |
| Develop plans for programs or projects                                  | 31 |
| Develop tables depicting data                                           | 33 |
| Evaluate manufacturing or processing systems                            | 68 |
| Examine biological or other material specimens under microscope         | 73 |
| Explain complex mathematical information                                | 30 |
| Maintain established procedures concerning quality assurance            | 87 |
| Maintain records, reports, or files                                     | 5  |
| Prepare reports                                                         | 8  |
| Prepare sample for laboratory testing, analysis, or microscopy          | 74 |
| Prepare technical reports or related documentation                      | 22 |
| Record test results, test procedures, or inspection data                | 48 |
| Use chemical testing or analysis procedures                             | 54 |
| Use computers to enter, access or retrieve data                         | 3  |
| Use knowledge of investigation techniques                               | 16 |
| Use knowledge of metric system                                          | 39 |
| Use laboratory equipment                                                | 60 |
| Use mathematical or statistical methods to identify or analyze problems | 30 |
| Use microscope                                                          | 71 |
| Use precision measuring tools or equipment                              | 17 |
| Use quality assurance techniques                                        | 61 |
| Use quantitative research methods                                       | 35 |
| Use relational database software                                        | 26 |
| Use scientific research methodology                                     | 21 |
| Use spreadsheet software                                                | 18 |
| Use word processing or desktop publishing software                      | 17 |

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

## Tools and Technologies that Both Occupations Have in Common

Similarity of Focus  
Occupation to Associated  
Occupation: 68

**Focus Occupation: Chemical Technicians (19-4031)**  
**Associated Occupation: Food Scientists and Technologists (19-1012)**

| Tools and Technologies              | Exclusivity |
|-------------------------------------|-------------|
| Business function specific software | 1           |

|                                                                                           |    |
|-------------------------------------------------------------------------------------------|----|
| Chemical evaluation instruments and supplies                                              | 10 |
| Chromatographic measuring instruments and accessories                                     | 16 |
| Computers                                                                                 | 1  |
| Content authoring and editing software                                                    | 1  |
| Data management and query software                                                        | 1  |
| Electrical measuring and testing equipment                                                | 7  |
| Electrochemical measuring instruments and accessories                                     | 9  |
| Fluid mechanics equipment                                                                 | 11 |
| Gas analyzers and monitors                                                                | 10 |
| Indicating and recording instruments                                                      | 2  |
| Industry specific software                                                                | 1  |
| Laboratory baths                                                                          | 24 |
| Laboratory blending and dispersing and homogenizing equipment and supplies                | 27 |
| Laboratory boring and grinding and cutting and crushing and pressing equipment            | 27 |
| Laboratory centrifuges and accessories                                                    | 13 |
| Laboratory decanting and distilling and evaporating and extracting equipment and supplies | 19 |
| Laboratory furnaces and accessories                                                       | 26 |
| Laboratory heating and drying equipment                                                   | 13 |
| Laboratory ovens and accessories                                                          | 15 |
| Light and wave generating and measuring equipment                                         | 4  |
| Liquid and gas flow measuring and observing instruments                                   | 15 |
| Liquid and solid and elemental analyzers                                                  | 19 |
| Pipettes and liquid handling equipment and supplies                                       | 16 |
| Spectroscopic equipment                                                                   | 10 |
| Temperature and heat measuring instruments                                                | 6  |
| Viewing and observing instruments and accessories                                         | 4  |
| Weight measuring instruments                                                              | 7  |

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.